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Before the
Federal Communications Commission
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)
)
Amendment of Parts 2 and 15 of the) ET Dkt. No. 95-19
Commission's Rules to Deregulate)
the Equipment Authorization)
Requirements for Digital Devices)

TO: The Commission

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COMMENTS OF
COMPAQ COMPUTER CORPORATION

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Compaq Computer Corporation ("Compaq") hereby comments on the issues raised in the above-referenced *Notice of Proposed Rulemaking ("NPRM")*, released February 7, 1995. Compaq, the world's largest manufacturer of personal computers ("PCs"), has been an active participant in previous Commission proceedings involving electromagnetic compatibility of digital devices. Compaq applauds the Commission's goal of replacing the current certification procedure with a simpler and more expeditious means for demonstrating compliance with FCC rules. Accordingly, Compaq supports the goals of the *NPRM* but believes there are alternatives to the Declaration of Conformity ("DoC") concept that would better achieve the stated purposes of this proceeding.

Summary of Positions

1. Verification, as currently applied to manufacturers of Class A devices and Class B digital devices other than personal computers and peripherals, should be adopted as an alternative to the Declaration of Conformity proposed in the *NPRM*.
2. Labeling should be revised and should offer a means for identifying the responsible party when tradenames and contract manufacturing are employed.
3. The FCC should not adopt a laboratory accreditation program.
4. Assembly of "tested" modular components will not ensure compliance with technical requirements of FCC rules. Instead, the approach proposed in the *NPRM* would create an unlevel competitive playing field that would inject far more variation into levels of compliance than now exists for those devices that are lawfully marketed. The net effect will be to alter the underlying standard and to provide an unwarranted competitive advantage.

Verification is a preferable alternative to the Declaration of Conformity.

Compaq sees no advantage to the proposed Declaration of Conformity program over the already documented verification program currently available to manufacturers of Class A equipment and most Class B equipment other than personal computers and

peripherals, which are now subject to certification.¹ In fact, except for the proposal to include a test report number in the DoC and to identify in the manual the responsible party by name, address, and telephone number, Compaq believes the two programs are identical.² Both require (1) a statement to the effect that the device is compliant with applicable rules and regulations and (2) a technical file (test report) to be made available to the Commission's staff within a reasonable amount of time after a request.

The requirement for identification of a compliance test report by date and report number in the manual is both burdensome and of no use to consumers of the final product. Compliance with FCC limits is often the last hurdle to clear before going into mass production. Lead time for printed matter that accompanies devices, where report information would be placed, is such that manufacturers would be forced to "reserve" a test report number and to assign arbitrarily a date that would not necessarily be the

¹ "Certification is an equipment authorization issued by the Commission for equipment designed to be operated without individual license under Parts 15 and 18 of its rules, based on representations and test data submitted by the applicant." 47 C.F.R. § 2.907(a) (1994). In contrast, verification is "a procedure where the manufacturer makes measurements or takes the necessary steps to insure that the equipment complies with the appropriate technical standard. Submittal of a sample unit or representative data to the Commission demonstrating compliance is not required unless specifically requested by the Commission pursuant to § 2.957, of this part." 47 C.F.R. § 2.902(a) (1994).

² The term "responsible party" is defined in Section 2.909 of the Commission's Rules, 47 C.F.R. §2.909 (1994), as the manufacturer or the importer in the case of equipment subject to verification. For reasons discussed, *infra*, Compaq submits that the term "responsible Party" should be clarified in the case of personal computers and personal computers subject to verification or to a DoC in order to accommodate better the common practices of contract manufacturing and private labeling.

same date (or dates) on which testing was actually conducted. Additionally, a referenced test report may not have much validity by the time the device goes through several "permissive" changes with the additional testing that usually accompanies such modifications.

The suggestion that flyers could be printed on short notice and inserted into boxes on the production floor ignores the realities of a high production environment. In situations in which hundreds of thousands of devices in scores of configurations or models are being manufactured, any requirement to insert materials into packaging would add time (and costs). Such steps inevitably lead to errors requiring boxes to be reopened for correct items to be inserted. The net result would be the addition of unwarranted costs to a product. Moreover, these costs would be irrelevant to actual compliance and would offer the consumer no benefit.

Compaq, therefore, submits that verification would serve the same purpose as the proposed DoC. Canada currently uses a verification approach for digital devices, including personal computers and peripherals. Verification has been employed for some 15 years by the FCC in the case of digital devices other than personal computers and peripherals. With a minor change in labeling to accommodate identification of the responsible party in cases involving the use of tradenames (i.e. private labeling) and contract manufacturing, verification could achieve the goals announced in the *NPRM* without the added burdens that would accompany the DoC approach.

The labeling rules should be revised to accommodate industry practices.

Compaq agrees that some type of labeling is required. Compaq urges, however, that the label include a "B" or an "A" so that the appropriate emissions class for the device would clearly be shown on the label.³ Compaq also suggests that the Commission consider accepting the European Union's "CE" mark as proof of compliance with FCC requirements. In such cases, the manual would still contain the requisite "information to user" and could, if the Commission were to require, include a statement to the effect that use of the CE mark shows compliance with the FCC requirements.⁴

Any revised approach to equipment approval for personal computers and peripherals also should address the matters of contract manufacturing and the use of

³ Compaq recognizes that there are situations where the emissions class of a device could change through the addition of certain peripherals. Most commonly, this occurs today in commercial environments in which computers are configured with token ring network adapters, which are generally built to the Class A standards because the devices are marketed for use only in commercial environments (as contrasted with certain other less expensive networking technologies that are appropriate for the home or the office). In such cases, the manual should make clear that if the computer has been modified to include a Class A device, the overall system should be regarded as meeting the Class A limits. The presence of an "A" on the label for the Class A device would help to clarify this status.

⁴ Use of the CE mark would be appropriate for digital devices because the RF emissions standards employed within the European Union are also now accepted by the Commission. International Harmonization of Digital Device rules, 8 FCC Rcd 6772 (1993). Unless and until there are harmonized standards for other devices between the United States and the European Union, the use of the CE mark would not be appropriate for informing consumers of compliance with other FCC standards.

tradenames. Not all digital devices are actually built by the company that oversees the design, quality control, and marketing of the devices. In some cases, the actual fabrication is contracted out to other entities. Where that entity is operating under the direction of the company that has control of the design, quality, and marketing for the device, it would be appropriate for the entity with control to be the "responsible party" as envisioned in the Commission's Rules.⁵

Other situations involve the placement of tradenames on devices that are designed and manufactured by entities other than that identified in the tradename. This practice is often employed, for example, in the case of monitors. In such cases, design and quality control generally rest not with the tradename owner, but with the manufacturer, even in those cases in which the tradename holder may specify that the device contain certain features. In order to minimize the disruption to existing trade practices while still providing the Commission with a clear path to the responsible party, Compaq urges that the label employ a simple coded identification analogous to the current FCC grantee code to identify the responsible party.⁶

⁵ Accordingly, some 8 years ago the FCC revised its rules to eliminate the requirement to include a "manufacturer code" within the FCC ID number. The Commission reasoned that the holder of the equipment authorization was the party to whom it should look for compliance because that entity was the one who made representations to the Commission.

⁶ Initially, existing grantee codes could be used for this purpose. A responsible party should have the obligation to keep the Commission informed as to the address of the entity associated with the code. Such an approach would have the additional advantage of being identified on the actual device and not simply in the manual, which

(continued...)

There is no need for mandatory laboratory accreditation.

Compaq strongly disagrees with the proposal for mandatory accreditation.

Current procedures, which require that the test laboratory have certain site information on file with Commission and that this be updated every three years, have worked well to facilitate submittal of compliance information. Compaq fails to see how a mandatory accreditation process will make the current compliance record any better. The integrity of a verification program for personal computers and peripherals would, be strengthened, however, by maintaining an FCC audit program so that those responsible for compliance would know that there will be oversight.

While mandatory accreditation would impose some costs on all laboratories and a significant burden on many, this issue involves far more than simply added costs. Compaq has spent millions of dollars on facilities and personnel to comply with emissions testing. Its Emissions Control Lab continues to be one of this country's state-of-the-art facilities for such testing. The NVLAP program, if adopted, would add yet another layer of paperwork and procedural requirements on top of those already necessitated by the need to maintain a high level of quality control. In an era when the government is required to assess critically whether any additional paperwork

⁶(...continued)

can be destroyed or misplaced. The use of a code to identify the responsible party is also employed by the FDA in its regulation of ionizing emissions from electronic products. 21 C.F.R. § 1010.3 (1993).

burden is fully justified, the mandatory imposition of what was originally billed as a voluntary program runs counter to sound public policy.⁷

Compaq also takes strong exception to the proposal that laboratories not having accreditation be required to follow current certification procedures for up to two years while waiting NVLAP accreditation. This would give an unfair economic advantage to those labs that have NVLAP accreditation with no corresponding benefit.

From time to time, Compaq has employed outside test agencies. NVLAP accreditation has never been a criteria for choosing these external labs. Instead, Compaq does its own laboratory evaluations to insure that the work will be done to its exacting standards. Reputable manufacturers take their responsibilities for compliance very seriously and several, including Compaq, have made considerable investment in building labs and staffing them with competent personnel. Reasons for this include the perception of increased liability for non-compliance and the need to maintain a reasonably high level of electromagnetic compatibility to facilitate operation of PCs.⁸ In short, the fact that the current system works without mandatory NVLAP accreditation argues strongly against mandating such a process.

⁷ If, as suggested by the NPRM at ¶ 12, accreditation facilitates the negotiation of mutual recognition agreements with foreign governments, the FCC should continue to permit such accreditation to be voluntary. Merely because other governments may have chosen to impose burdensome procedures is no rationale for the Commission to make such requirements apply to all who verify devices for compliance.

⁸ As PCs become more complex, the issue of internal interference assumes greater importance. Thus, the evolution of PC design has, of necessity, caused manufacturers to focus attention on electromagnetic compatibility.

The modular approach will reduce rather than enhance compliance.

Compaq believes that no body of scientific evidence shows that an assortment of previously certified components can be bolted together and routinely comply with the FCC Rules on radio frequency emissions.⁹ Compaq's own in-house testing has demonstrated this fact. On various occasions Compaq engineers and technicians have taken components from previously certified devices and have evaluated them in new products only to have the previously compliant subassembly become non-compliant in the new device. The *NPRM* mentions only power supplies, motherboards and enclosures. Surely the Commission is aware that there are other components that go into a computer that are not currently classified as a peripheral but that do affect the emissions of a system. Some of the more basic components such as hard disk drives seem to have been overlooked.¹⁰

The idea that power supplies affect only conducted emissions is outdated. Compaq has found that power supplies often represent some of the biggest obstacles to achieving compliance with radiated limits because of coupling that occurs within

⁹ In this respect, Compaq stands by its comments in GEN Docket No. 90-413 in the matter of modular computers. Provisions for Introducing Modular Personal Computers and for Facilitating Upgrades of Digital Devices, Gen. Docket No. 90-413, "Reply Comments of Compaq Computer Corporation," filed Dec. 14, 1992.

¹⁰ The effects of such "sub-assemblies" can be accounted for readily in a program where testing is the rule rather than the exception. Unfortunately, the modular approach would not require testing of most completed devices.

complex systems and because of radiated emissions associated with the switching within the power supply. Thus, power supply emissions are not always neatly contained within the power supply. Despite shielding and decoupling techniques, emissions within power supplies can couple into other cabling in computer systems and radiate, just as emissions from other aspects of a computer can couple into a power cord and radiate. The simple fact is that each major configuration change produces its own set of emissions control problems.

While some manufacturers may find testing to be burdensome, the DoC approach, if conscientiously applied, would be equally or more burdensome. If the scenario of where only power supplies, chassis and motherboards are used, the combinations for different DoCs is substantial. For example, if a manufacturer has access to only one motherboard but can get power supplies from 6 vendors and chassis from 10 vendors it quickly has 60 possible DoCs to prepare for a product sold under a single model number. The DoC would likely read "covered by one or more of the following DoCs" with a page full of report numbers much like current patent disclosures.

The modular approach also would greatly increase the variation already inherent in the process. Emissions measurements vary from test site to test site and even from device to device within a given model because of minor variations in parts and assembly. Holders of equipment authorizations are under an obligation to comply with the emissions limits within the variation that can be expected due to quantity production

and testing on a statistical basis. The modular approach would make it quite possible and legal for all units shipped to fail to meet the emissions limits. Not only would this effectively change the limits for some manufacturers, it would create an unlevel playing field with significant economic consequences as all companies will be under added pressure to compete with devices that simply do not meet the limit but may be marketed lawfully by virtue of having the requisite "pedigree" in the form of a DoC.

Under such a scenario, enforcement will be virtually impossible. If a device is first tested as part of an audit and it fails, the problem would be compounded as the Commission grapples with whether to pursue the paper trail associated with the product. Any paper audit would then require an exhaustive collection of the underlying DoCs. Then, the Commission would have to ascertain whether the referenced DoCs were properly prepared. The net result would be less compliance, more paperwork, and more confusion.

Conclusion

In light of the problems associated with modular approvals, Compaq urges the Commission to table that concept and move expeditiously to adopt requirements that implement a program of verification for personal computers and peripherals. If further consideration of the modular approval concept is warranted, the FCC should proceed only on the basis of a further notice of proposed rulemaking. While Compaq doubts that the record needed to support a more refined modular proposal that addresses the

issue of variation and the effect on the underlying emissions standard can be developed, the Commission should not delay the significant benefits in terms of decreased time to market that would flow from the use of verification for personal computers and peripherals.

Respectfully submitted,

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